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# Food Safety Educator

Your consumer education connection

Volume 3, No. 4 1998

## New Consumer Research Driving Food Safety Education

New research by federal agencies is beginning to shed light on consumers' knowledge and awareness of foodborne pathogens. It's also revealing ways consumers are improving their food handling habits--and behaviors that continue to be risky.

To help food safety educators link to this new information in the planning stage, a small working group of federal researchers and food safety educators met together this past July to discuss the research and possible implications for consumer education.

While not all data discussed at the consumer research meeting have been published yet, this issue of *The Food Safety Educator* highlights data now being released. As additional results are analyzed and published, they'll be covered in this newsletter.

Consumer educators from the Food and Drug Administration (FDA), USDA's Food Safety and Inspection Service and Cooperative Extension met with federal researchers representing FDA, USDA and the Centers for Disease Control and Prevention (CDC).

According to FDA's Food Safety Education Officer Marjorie Davidson, "Data emerging from consumer research can provide us with vital information as we begin developing new food safety education programs.

"We are beginning to collect information that provides us with a picture of consumer behavior over a number of years and sheds light on trends and changes in behavior.

"In addition, we are collecting data through a number of sources: the FDA/FSIS consumer survey, new CDC data, and new independent research. As a result, we can begin to refine and

structure food safety education messages that target behavior that contributes to food safety risks. And, as educators, we can begin to try to guide future consumer research."

According to Davidson, the working group sought to accomplish a number of goals, including sharing study results across agencies, identifying how research can guide consumer education messages and identifying areas for future research.

In discussing the implications of the research, working group participants observed that:

**Future communication projects for educators may need to focus on "skills building."** People report that they are handling food safely, said one researcher, but they don't really know how to follow through. They think they are thoroughly cooking food, when in fact it's undercooked. They report they are washing their hands, when they are only rinsing with water.

**Consumers may be more receptive to "new" safe food handling information—** information about emerging bacteria or new outbreaks. In addition, when people's attention is drawn to food safety issues in the news, educators need to be ready to help people learn.

In considering how to communicate "risk" to consumers, **educators need to understand and deal with consumer feelings concerning risks.** Overemphasizing risks may alienate consumers and scientific data concerning risk may seem insignificant to consumers. Educators need to help consumers understand who faces increased risks from foodborne illness and why. ●

### inside:

Highlights of data presented at the consumer research meeting including...

- FDA/FSIS Consumer Surveys
- FDA Focus Group Research
- CDC Research
- Also inside...
- Thermometer Matters
- News Briefs
- The Bac Page

### FDA: Consumers Are Changing

"The big picture is, people say they are changing... changing like crazy," said Dr. Alan Levy of the Food and Drug Administration (FDA). Consumers' handling of food has improved dramatically over the past 5 years, according to Levy.

People now report a greater awareness of some specific pathogens and many now say they follow the basics of safe food handling. But, problem areas and food safety gaps still exist.

What's generated the reported change? According to Levy, much of the knowledge gained appears to have been driven by foodborne illness outbreaks and media coverage.

These are some of the results now being analyzed from the 1998 FDA/FSIS Consumer Food Safety Survey.

FDA researchers Drs. Sara Fein and Levy provided participants at the consumer research meeting with insights drawn from the survey and discussed how food safety educators might make use of the data.

Fein presented an overview of the survey's findings and compared them to findings reported from two previous surveys taken in 1988 and 1993.

Levy presented information drawn from various demographic groups.

**What the survey shows:** Fein explained that the 1998 survey was a representative nationwide telephone survey of 2,001 people taken between February and April.

While not all questions asked in 1988 and 1993 were identical, "the trends over the three surveys allow us to look at behaviors, awareness, knowledge, and risk perception over a period of time," Fein said.

**The surveys show many improvements, according to Fein.**

- Some of the most dramatic changes have concerned consumers'

knowledge of microbes. In 1993, 84 percent (%) of consumers knew about *Salmonella*. In 1998, that number had increased to 93%.

In 1993, 39% of consumers knew that food with *Salmonella* contamination could be made safe by cooking. By the 1998 survey, that figure had jumped to 62%.

Fein reported that the survey also shows a significant reduction in the number of consumers eating pink hamburgers. Twenty-five percent reported that they ate pink hamburgers in 1988--16% reported this behavior in 1998.

- People also have a greater understanding of the risks of leaving foods, like meat, at room temperature. In 1988, 17% of consumers felt it was okay to leave meat out overnight. Today that figure is down to only 6%. In 1988, 21% thought meat left at room temperature for more than 2 hours was safe. Today, only 8% of consumers are making that mistake.

- People see increased food safety risks in some foods. In 1988, 31% viewed chicken as a high-risk food, today that number is 45%. In 1988, 25% saw red meat as a high-risk food, today 49% see it as risky.

**So what are the most common problem areas?**

- Only 5% of consumers see eggs as a food with potentially dangerous bacteria, down from 9% in 1993-- and their handling of eggs reflects that fact.

Fein noted that 65% don't wash their hands after handling raw eggs. And, she pointed out, 9 times as many consumers eat raw eggs (37%) as eat steak tartare. Raw cookie dough appears to be one of the main sources of raw egg consumption.

- Consumers seem to understand the importance of thorough cooking, but **only 2% report using food thermometers to check hamburger patties for doneness.** And only a few cooks (14%) use a thermometer to determine when chicken parts are done.

- While consumers have improved their knowledge about the importance of handwashing, Fein reports that "**cross-contamination** is still a difficult problem."

Twenty-four percent of consumers admitted they don't wash their hands with soap after handling food like raw meat, and 21% don't wash their cutting board after cutting these foods. In addition, 32% don't wash their hands before cooking the main meal.

- Another knowledge gap: **food safety risks from homes.** By and large, most consumers still think that problems are most likely to occur in restaurants or processing plants, not their own homes. Forty percent think that it is not common to get sick from food preparation at home.

"People don't think food safety is their responsibility," Levy said. "You can see this in a number of places. They don't feel concerned about risks they can control."

- Another difficult issue: **consumers don't know that some people are at higher risk of foodborne illness than others.** Fein noted that nearly two-thirds (62%) were not aware of any risk groups. Most of those who named a risk group used behavioral characteristics, such as not washing hands. Only 4% of respondents correctly noted that young children are high risk. Only 6% knew that the elderly were also high risk.

Levy pointed out that "people just don't see themselves in the risk groups."

# Go to the Source

For instance, the term 'elderly' needs to be defined, perhaps explaining that it is people over 60. We need to educate people that liver risks relate to drinking. We need to explain what 'immune compromised' means."

**Those are the "overall" numbers, but who is actually doing what?** How do the behaviors of older people compare to those of younger people for instance?

Well, the older folks have it all over the younger folks. According to Levy, their food handling practices are much safer. "In general, older people have good food handling habits, with the exception being their handling of eggs."

Who else does a good job in terms of food safety knowledge and safe handling of food? Blacks and ethnic minorities, and people with less education.

People with low food safety knowledge and skills include young people (ages 18 to 25), people with higher education levels, whites, and men.

### Where do we go from here?

Current research indicates that, by and large, people report they are handling food safely. But, Levy said, a question remains concerning the gap between what people say they do and what they actually do.

"People tell us they never undercook chicken, but independent research shows that 30% of the time the chicken is not cooked thoroughly. It's not intentional, but it's undercooked. I think that is really very significant. Even when people are trying, they don't always achieve what they intend."

Future research may address this gap. ●

One of the best ways to zero in on what consumers are thinking, is to ask them. That's the reason for focus group testing.

Dr. Alan Heaton from FDA has used focus group research on a number of issues that are of critical importance to food safety educators, including:

- Thermometer use
- Hamburger handling
- Safe handling label
- *Vibrio vulnificus*
- FDA consumer advisory.

"You can learn a lot from focus groups, and it's a process that can be done quickly and cheaply," Heaton reinforced at the consumer research meeting. He added that it's important to have a trained moderator.

One of Heaton's observations from focus group research was that people "like information that is new and they can use--something that prompts them to say, 'Wow, I didn't know that!'"

Heaton's research concerning the FDA consumer advisory revealed useful information for educators about consumer reactions to "risk" and warning labels.

The FDA consumer advisory was designed as a "warning" on restaurant menus that would alert high-risk people to dangers from foods, such as uncooked eggs. Focus group research showed that consumers reacted negatively to the warnings. As a result, FDA is changing its initial approach.

If you're interested in more information on FDA's focus group research, call 202/205-5394. ●

## Do's and Don'ts on Warning Messages

FDA's focus groups provide great information for educators.

Here are just a few highlights gleaned from FDA's research:

### Warning messages are ineffective because:

- People perceive that nutrition and dietary advice is constantly changing.
- There is a pervasive sense that warnings exist primarily to protect manufacturers from lawsuits.
- Warnings have become so commonplace they are ignored.
- People don't see themselves in "risk" categories, especially the elderly.
- People have trouble interpreting statistical information about risk. "It's hard to use numbers to persuade people," Heaton said.

### Warning messages are effective when they:

- Provide new or "added value" information.
- Clearly state the nature of the hazard.
- Put the most important information first--don't bury it.
- Are concise.
- Are attention-getting, either visually or written in a novel way.
- Are believable.
- Have been thoroughly tested.

## Highlights: Consumer Research Meeting

### CDC Reports...

#### FoodNet

The Foodborne Disease Active Surveillance Network (FoodNet) now monitors foodborne disease in 7 sites covering 20.3 million people, 7.5% of the nation's population, according to Samantha Yang, MPH, of the Centers for Disease Control and Prevention (CDC).

Yang presented an overview of FoodNet's surveillance systems and goals for 1998, including surveillance for Hemolytic Uremic Syndrome and improved outbreak response.

An abstract by Dr. Fred Angulo distributed at the consumer research meeting pointed out that "FoodNet is a sentinel network that can rapidly respond to new and emerging foodborne pathogens."

Among the key findings of CDC's surveillance activities in 1997:

- **The overall burden of diarrheal disease is significant.** FoodNet estimates that 360 million cases of diarrheal illness occur each year, resulting in approximately 28 million medical consultations. It's not known at this time what percentage of these illnesses can be linked to food.

- ***Campylobacter* was the most frequently diagnosed pathogen** under surveillance, even though outbreaks caused by this pathogen are rare. A study of *Campylobacter* infections that began in 1998 will identify control points and direct future prevention strategies.

- **FoodNet showed that the occurrence of *Escherichia coli* O157:H7 varied among the FoodNet sites** and that consumption of undercooked hamburgers at homes or restaurants is a risk factor for infection.

In contrast with the findings of previous investigations, hamburgers eaten at fast-food restaurants were not associated with infection, suggesting that

recent changes in the industry may have reduced *E. coli* O157:H7 infections from that source.

Expanded efforts to reduce contamination of meat and to promote thorough cooking of hamburgers can further reduce the number of these infections. A CDC study is planned to explore other potential control points.

- **Hospitalization rates were highest for persons with *Listeria* infections and *Listeria* caused nearly half of the reported deaths from foodborne disease.** Because of this, FoodNet will conduct additional studies of *Listeria* infections to identify food sources and potential control points.

- **FoodNet and state surveillance identified an outbreak of *Vibrio parahaemolyticus*** associated with the consumption of raw oysters in western states. As a result, oyster beds were closed and the public was warned, preventing further human illness.

More information on FoodNet is available through the Internet, including the April 1998 *Report to Congress*. Go to:  
<http://www.cdc.gov/ncidod/dbmd/foodnet/foodnet.htm> ●

#### Behavioral Risk

Another source of information on consumer behavior is a survey of approximately 20,000 people conducted by a number of state public health departments through their annual surveys of risk behaviors, the Behavioral Risk Factor Surveillance system, (BRFSS).

To help assess risk in relationship to food handling, CDC and FDA developed 12 questions about food safety that can be added to the state surveys.

In 1995 and 1996, eight states used all or some of the questions when they conducted their BRFSS surveys. The results show some interesting similari-

ties to the FDA/FSIS Consumer Survey.

Dr. Sean Altekruse, FDA liaison to CDC, briefed the consumer research meeting on their findings. He noted that "risky behavior was relatively common among men and young adults, as well as high-income earners. One theory is that since high-income earners don't fix food often, they may not be aware of how to handle food safely.

"There is also some suggestion that kitchen experience is what matters more than didactic information."

According to Samantha Yang, MPH, of CDC, "We're encouraging states to add these food safety questions to their risk factor surveillance. Surveys can be vitally important in helping states identify their food safety education needs. And, if the data is collected periodically, states can use this information to evaluate the effectiveness of their education efforts."

These survey results were recently published in the *CDC Morbidity and Mortality Weekly Report*, Sept. 11, Vol.47/SS-4. Internet access:  
[http://www.cdc.gov/epo/mmwr/mmwr\\_ss.html](http://www.cdc.gov/epo/mmwr/mmwr_ss.html) ●

#### Coming Soon!

A FoodNet newsletter. Now you won't have to find out secondhand what's happening with foodborne disease surveillance. Find out first.

**CDC is launching a free quarterly newsletter designed to provide you with information from the sentinel sites as well as a preview of upcoming projects. Interested?**

**Contact:**

**Sam Yang, MPH**

**CDC/FDDB/NCID**

**Mail Stop A-38**

**1600 Clifton Rd., N.E.**

**Atlanta, GA 30333**

**404/639-4356 say9@cdc.gov**

# Temperature Matters

Do you use a food thermometer? Many folks would answer “yes” for the holiday meal. But how about for every day?

According to the new FDA/FSIS Consumer Survey, only 2% of people use a food thermometer to check the temperature of ground beef patties.

That’s a problem FSIS is determined to do something about. New USDA research proves that the color of meat is not a reliable indicator that the meat has reached a temperature high enough to destroy harmful bacteria such as *E.coli* O157:H7.

According to Susan Conley, director of FSIS’s food safety education and communications staff, “using a food thermometer is the only way to be sure a ground beef patty is cooked to a high enough temperature to destroy harmful bacteria.”

The temperature needs to reach 160 degrees F. Research now shows that at that temperature, the patty may look brown, pink, or some variation.

Conley pointed out that this guidance is especially important for people who are more susceptible to foodborne illness: this includes young children, the elderly, and people with weakened immune systems.

“We will be mounting an intensive campaign to teach people about the importance of using food thermometers for ground beef patties as well as other everyday meals.

“Research shows that most people *intend* to cook thoroughly, but they don’t always do it. A food thermometer is the only reliable way to know if food is safely cooked. And, as an added bonus, the quality is good too. At 160 degrees F you get a nice, juicy burger,” Conley said.

“People are used to using thermometers for the holidays. They can use it every day and take a significant step in protecting themselves and their families,” Conley added.

Check our inserts for a “how to” fact sheet on using food thermometers. ●

## A Grocery Store Chain Leads the Thermometer Bandwagon



USDA’s concern about use of food thermometers has helped prompt other thermometer campaigns.

**Wegmans Food Markets, Inc., a grocery store chain in New York and Pennsylvania, launched a campaign last summer** to educate consumers about the importance of cooking ground beef to 160 degrees F.

According to Wegmans Director of Consumer Affairs, Mary Ellen Burris, “the campaign has produced very positive results positive results reversing a downward trend in ground beef sales and increasing consumer trust in Wegmans.”

The chain began marking its ground beef packages with bright yellow labels encouraging thermometer use and cooking to 160 degrees F.

At the same time, Wegmans began in-store demonstrations in each of the chain’s 57 stores, teaching consumers about safe grilling of burgers.

A poster used in the demonstration pictured two burgers, one pink and one brown. “Which is done?” the poster asked. The poster provided the answer: the pink burger had been cooked to 160 degrees F, the brown burger to 140 degrees F.

As Burris notes, “A lot of factors can cause hamburger to appear brown. The only way to really know if it’s done, is to use a meat thermometer.”

Among the campaign’s impressive results:

- Ground beef sales are moving up, instead of down.
- During the campaign’s 3 months, sales of thermometers and disposable temperature indicators reached over 22,000 units. This represents over 80 percent of their year-to-date sales.
- Consumer awareness of the recommended cooking temperature for burgers (160 degrees F) increased from 12 percent to 38 percent.
- The number of consumers judging “doneness” by temperature doubled, jumping from 8 percent to 16 percent.

Finally, and significantly, “consumer trust in Wegmans meat increased as did their belief that Wegmans has true concern for their customers when it comes to food safety,” Burris said. ●

### FYI...

For a variety of background materials on thermometer use and the color of cooked ground beef, check the FSIS web site at: <http://www.fsis.usda.gov>

The Hotline, part of USDA's Food Safety and Inspection Service, provides accurate, up-to-date information to callers on safe food handling and the prevention of foodborne illness. Home economists, registered dietitians and food technologists staff this public health service.

## ■ Holiday Advice From the Hotline

USDA's Meat and Poultry Hotline has issued its new package of holiday information:

- Countdown to the Holiday
- Safe Handling of Complete Meals to Go (brochure)

You can access them at:  
<http://www.fsis.usda.gov/OA/whatsnew.htm>

Also, check the inserts in this newsletter for some "Consumer Information" fact sheets with great reminders about "**Turkey Basics.**" These fact sheets focus on:

- Safe Defrosting
- Stuffing
- Safe Cooking
- Handling Cooked Dinners

Don't forget that our nationwide, toll-free hotline has timely food safety messages available 24 hours a day, 7 days a week. ●



## ■ A Thermometer Campaign!

Wyoming Cooperative Extension also launched a thermometer campaign in the fall of 1997. With a costumed hamburger character, free disposable temperature indicators, brochures and grocery store displays, the local extension educator, health inspectors, and volunteers fanned out through Albany County for an 8-week period.

In their post-survey they found the number of people using the disposable indicators to test the doneness of ground beef had increased from 3.3 percent to 14.2 percent and the number of people aware of the disposable indicators increased from 9.6 percent to 46.8 percent.

For more information on their campaign, contact:  
Mary Kay Wardlaw  
Albany County Extension Office  
Box 1209  
Laramie, WY 82070 ●

## ■ FREE: *Food Talk*

*Food Talk* is a free monthly e-mail newsletter for health professionals, educators and consumers. It's published by University of Nebraska Cooperative Extension, and it's distributed to more than 3,000 subscribers in 57 countries.

Each issue provides a short, how-to message on food, nutrition or food safety. The newsletter is written by Alice Henneman, extension educator and registered dietitian. And you're encouraged to copy the material, just provide credit.

To subscribe, send your request:  
To: [LISTSERV@UNLE.EDU](mailto:LISTSERV@UNLE.EDU)  
Subject: (please leave blank)  
Message: SUBSCRIBE FOODTALK ●

## ■ Irradiation Information on the Web

Glimpses into the world of irradiation are appearing on the web. One site takes you inside an irradiation facility with a "virtual" tour through an on-line video guide. The other highlights research about irradiation technology.

The Grocery Manufacturers of America (GMA) has the on-line video guide providing a virtual tour of a Florida food irradiation facility. You can download the video, or you can order a copy. The web site includes speeches from GMA's recent conference on irradiation. Go to: [www.gma-brands.com](http://www.gma-brands.com)

The Food Safety Consortium and Iowa State University Extension support research into irradiation by housing a plant with a commercial-size food irradiator on-site. The plant is called the Linear Accelerator Facility. You can check out the plant, as well as related irradiation research, through:  
<http://www.foodsafety.iastate.edu> ●

## ■ Making Sense of Science

**H**ardly a week goes by when we don't hear of some new, and seemingly conflicting, study about food and nutrition.

Consumer surveys confirm what we had already suspected: people are confused. How can we do a better job of communicating emerging science and put it in a context that people can understand better?

To answer that question, an advisory group was convened by the Harvard School of Public Health and the International Food Information Council Foundation (IFIC).

The advisory group developed a set of guidelines called *Improving Public Understanding--Guidelines for Communicating Emerging Science on Nutrition, Food Safety, and Health*. Their goal is to help scientists and communicators provide the necessary context and qualifiers to aid the public in evaluating a study's relevance and importance.

In an introduction, Timothy Johnson, MD, MPH, Medical Editor for *ABC's Good Morning America*, notes: "These *Guidelines* can only make a difference if they don't sit on a shelf. Putting these recommendations into practice just might make a difference in the public's understanding of diet and health...."

There are specific guidelines for a variety of groups, including journalists, scientists, journal editors and interest groups.

The guidelines were first published in the *Journal of the National Cancer Institute* (February 4, 1998, Vol. 90, No. 3).

They have since been reproduced and are available through the Foundation. You can place an order or download the document from their website: <http://ificinfo.health.org> ●

## ■ Dealing With "Hazard-Weary" Consumers

**H**ow do you deal with consumers who have been over-exposed to hazards news?

Susan Conley, director of the FSIS food safety education and communication staff, addressed this problem in a speech to environmental sanitarians in August.

The answer, she said, is not to provide "less information. We have a responsibility to empower the public to protect itself from the public health hazard of foodborne illness."

Communicators, Conley said, need to provide information in a way that minimizes the "hazard-weary" phenomenon.

To do this, Conley suggests that communicators take a number of steps. The first, and most important step, is to make sure the information is science-based. This is a process, she acknowledges, that has become "a lot more complicated in recent years."

In addition, she encouraged communicators to remember that "the messages must be practical and motivate consumers to action. They must also be consistent and when needed, targeted for a specific audience."

To read the speech, go to: [http://www.fsis.usda.gov/OA/speeches/sc\\_jamfes.htm](http://www.fsis.usda.gov/OA/speeches/sc_jamfes.htm) ●

## ■ Sprout Warning

**T**his past summer, FDA reaffirmed previous health advisories that people at high risk for serious foodborne disease should avoid eating raw alfalfa sprouts.

The Centers for Disease Control and Prevention also issued similar advice in August, following outbreaks of *E. coli* O157:H7 traced to sprouts. The govern-

**C**atherine E. Woteki, the USDA Under Secretary for Food Safety, has been elected to the prestigious Institute of Medicine of the National Academy of Sciences (NAS).

Each year, Institute members devote volunteer time to conducting studies and issuing reports on a broad range of health issues.

In a press release, USDA Secretary Dan Glickman said, "The Institute of Medicine is recognized worldwide for its members' work in examining policy matters related to the public's health. It's an honor to have the senior food safety official of the Department of Agriculture elected to such an esteemed group, and I know Dr. Woteki will contribute to its efforts."

NAS is a private, non-profit society of scholars engaged in scientific research. In 1970, NAS established the Institute of Medicine to address public health issues.

It advises the federal government on public health matters and, through its own initiatives, identifies and studies issues related to medical care, research and education. The Institute currently has 574 active members. ●

**News From FSIS**

ment and growers are exploring intervention methods to improve sprout safety.

**FDA's Food Information Hotline: 800/FDA-4010**

**FDA's website: <http://www.cfsan.fda.gov>** ●

# The BAC Page

## ■ BAC Hits:

There have been over 2 million hits to date on the Fight BAC!™ website.

Join the crowd. Check it out.  
[www.fightbac.org](http://www.fightbac.org)

## ■ BAC is Going and Going and Going...

In the past year, the Fight BAC!™ campaign has been everywhere and done just about everything.

- **TV** As of this past August, more than 100 stations carried the BAC public service announcement including 15 of the "Top 25" markets. This represents an estimated \$1.7 million of free airtime!
- **RADIO** Two public service announcements produced by the Colorado Beef Council released last year received 23,000 broadcasts, representing a potential audience of 41 million listeners.
- **NEWSPAPERS** Articles about Fight BAC!™ have appeared in thousands of newspapers and magazines, including *Parade*.

### **PUBLICATIONS are flying around the country.**

The Partnership for Food Safety Education has shipped approximately 12,000 supermarket kits to Food Marketing Institute members and about 52,000 community action kits to health educators.

The Consumer Information Center, (CIC) in Pueblo, Colorado has distributed more than 30,000 copies of the BAC brochure and another 26,000 have been distributed by the Partnership. CIC can be reached tollfree at 1/888-878-3276.



## ■ And Now...

# The BAC Store is Open!

Many Fight BAC!™ partners are interested in buying materials instead of reproducing them. The Partnership has a number of items for sale, including the very popular animated 30-second public service announcement. It's available for only \$3 in VHS format, or Beta for \$15.

Also available are bulk copies of the color brochure in English or Spanish, and the Supermarket Kit and Community Action Kit.

## ■ Coming Soon...

The public relations firm Fleishman Hillard has been selected to spearhead this year's campaign. The firm will focus on national recognition of the BAC!™ character. Also in the works for this coming spring: a teacher's guide for grades four through six.

You can order these materials and more directly from the website, or contact:

Partnership for Food Safety Education  
800 Connecticut Ave., N.W. Suite 500  
Washington, D.C. 20006  
202/452-8444  
fax: 202/429-4550 ●



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